



Your Guide to Isle Royale National Park
www.nps.gov/isro

National Park Service
U.S. Department of the Interior



Barometer of a Changing World

A SMALL PARTY OF CANOEISTS MAKES ITS WAY along the portage between Siskiwit Lake and Malone Bay. They stop often-- to wipe sweat from their brows and swat at the endless barrage of mosquitoes. Off in the distance, a loon is calling. It could be a scene from this summer or last, except for the clothing and gear. Fashion dates this expedition – it is 1978. Along with their gear, the expedition members are toting a precious cargo; mud from the bottom of Siskiwit Lake.

As early as 1965, the presence of the poison DDT had been noted in Lake Superior. It was assumed that it entered the lake as runoff from surrounding agricultural land. But with advancement in technology in the following decades, analysis revealed not only DDT but an astonishing list of over 300 synthetic chemicals and metals in Lake Superior’s waters. Some of these chemicals, including PCBs and the insecticide toxaphene, had been either banned in the United States and Canada or were not used in the area. Runoff did not seem to explain their presence in Lake Superior. It was a perplexing puzzle.

Scientists searched all around the lake, looking for a source for the toxic brew. They found nothing; until they came to Isle Royale’s Siskiwit Lake. Sitting fifty feet above Lake Superior, Siskiwit was not fed by the waters of the big lake. Mud from this lake on a remote, protected island would not be affected by human activities on the shores of Lake Superior. But when the mud was tested, toxaphene was present and the concentration of PCB’s was double of that in Lake Superior! The findings from Siskiwit Lake confirmed the idea that chemicals could be picked up by the atmosphere and later deposited through precipitation at far flung locations, sometimes circling the globe before finally coming back to earth.

When we make the journey to Isle Royale, we have the sense of stepping out of the human-centered world into a place that is separate from the chaos of modern life. We leave behind highways, strip malls, and skyscrapers. We trade the odor of car exhaust, the brightness of neon lights and the noise of

traffic for the sweet smell of balsam fir, the glow of a starry night and the occasional call of a loon in a symphony of silence. It feels separate; and it is. It is this separateness that makes Isle Royale National Park an outstanding place for research.

We tend to think of national parks as being completely protected areas. But, the surrounding landscape strongly influences what happens inside the borders of most parks. Increased human activity and development, often right up to the park boundaries, can change the dynamics of the ecosystem: perhaps speeding the invasion of non-native species or changing the quality of the habitat. Out in the midst of Lake Superior, without the confounding influences of local human-driven change muddling the picture, Isle Royale becomes the ideal place to study the effects of regional and global changes. Long term studies, many of them already decades long, provide baseline data for comparison. Researchers monitor and record changes. Increased numbers of ticks, an altered snow pack and changes in bird populations and species composition may be indicators of a changing climate. Siskiwit Lake mud is still examined and continues to document the presence of an ever-increasing collection of persistent pollutants in our air and water.

The island also records our successes. When researchers examined the moose teeth from years of collected skulls to determine their mercury levels, they discovered that mercury levels dropped by two thirds in the years immediately following the passage of the Clean Air Act. It shows that a single act can make a difference. In fact every act, however small, makes a difference. As we act, the island barometer may measure many more successes.

So come, experience for yourself the separateness of Isle Royale. Perhaps, like the researchers, and like so many others, you will discover that this separate place is really a place that connects you to the rest of the world, and to your own backyard.

Valerie Martin, Park Ranger

WELCOME TO ISLE ROYALE
National Park. Once valued for the copper its rocks contained, today’s visitors find value in its isolation and pristine conditions.

Scientists come to Isle Royale for these same reasons. In 2008, a blue ribbon panel of scientists from around the country convened on the Island to create a strategic plan for research in Isle Royale National Park. The panel recommended research priorities for the next decade. Priorities included: Using the recently completed state-of-the-art soil survey in conjunction with established studies with long-term data on vegetation which could reveal much about forest dynamics; soliciting visitor opinions on the influence of research on their park experience; and expanding studies of moose and loons to shed light on the effect of these animals on aquatic ecosystems.

Future generations may gain precious information from long term research studies, helping us better understand our relationships with nature. I invite you to come explore Isle Royale, to hike the trails, to boat the waters or simply to enjoy the quiet beauty – to explore your own relationship with the natural world.

Phyllis Green, Superintendent



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Educational Programs about the natural and cultural history of the park.

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Pull-out section with information on Leave No Trace, hiking, camping, fishing, and boating.

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Books and maps provided through the Isle Royale and Keweenaw Parks Association.



Contacts

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Fax: 906-482-8753

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E-mail for General Information:

ISRO_ParkInfo@nps.gov

Emergency use only:

800-727-5847

Isle Royale and Keweenaw Parks Association (Books & Maps)

800 East Lakeshore Drive
Houghton, MI 49931-1869

Phone: 800-678-6925, 906-482-7860

Website:

www.irnha.org

E-mail:

irnha@irnha.org

Rock Harbor Lodge

Summer

P. O. Box 605
Houghton, MI 49931-0605

Phone: 906-337-4993

Winter

Isle Royale Resorts, P. O. Box 27,
Mammoth Cave, KY 42259-0027

Toll-Free Reservations: 866-644-2003

Phone: 270-758-2001

Website:

www.isleroyaleresort.com

E-mail:

isleroyaleresort@starband.net

Weather Forecasts

for Isle Royale

Michigan

www.crh.noaa.gov/mqt

Minnesota

www.crh.noaa.gov/dlh

National Weather Service

Radio Forecasts

- 162.400 MHz from
Houghton, Michigan.
- 162.475 MHz from
Thunder Bay, Ontario, Canada.

Keweenaw Convention and

Visitors Bureau

Phone: 800-338-7982

Website:

www.keweenaw.info

E-mail: info@keweenaw.info

Minnesota's Grand Marais

Visitor Information Center

Phone: 888-922-5000

Website:

www.grandmarais.com

Michigan Department

of Natural Resources

Fishing License Purchase

Website:

www.michigan.gov/dnr

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- Photographs from the Isle Royale
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Did You Know?

The National Park Service is steward for more than 80 million acres of public land. To ensure that these places remain healthy and whole, park managers are required to use the best available science in making decisions. Like many other parks, Isle Royale has long-term inventory and monitoring programs that assist in evaluating ecosystem integrity and trends. Scientists had been studying the resources of Isle Royale long before it became a national park. There is still much to learn.

- 1) Isle Royale is considered to be one of the birthplaces of ecological science. In what year was “An Ecological Survey of Isle Royale” published. Hint: there were no wolves or moose on the island at this time.
- 2) In 1981, Isle Royale National Park was recognized by the United Nations for its potential for scientific research on North Woods ecosystems. What was that designation?
- 3) From 1996-2006, park biologists surveyed frog and toad abundance and diversity by listening to their calls during the spring and early summer. How many species have been recorded on Isle Royale?
- 4) Isle Royale is the only place on Lake Superior that loons nest. For nineteen consecutive years biologists have monitored this state threatened species. How many loon territories were recorded in 2008?

1) 1909: Dr. Charles Adams along with students and researchers from the University of Michigan spent two summers doing survey work on Isle Royale in 1904/05.
2) Biosphere Reserve
3) 7: American Toad, Spring Peeper, Green Frog, Wood Frog, Mink Frog, Boreal Chorus Frog, Eastern Grey Tree Frog
4) 12: 41 on Lake Superior waters, 71 on inland lakes

ANSWERS



The National Park Service
cares for special places saved by
the American people so that all may
Experience Our Heritage



Rock Harbor Lodge and Windigo Store

Lodge Rooms

Sixty rooms are available; each accommodates four and offers private bath. Available 6/2 thru 9/12.

Housekeeping Rooms

Twenty duplex cottages accommodate six and are furnished with utensils, dishware, private bath, double bed and two bunk beds. Available 5/22 thru 9/12.

Gift Shop and Dockside Store

Gift Shop offers handcrafted gifts, apparel, photo supplies, postcards, souvenirs, daily fishing licenses, and tackle. The store offers groceries, freeze-dried foods, fishing tackle, stove fuel, camping, hiking, and boating accessories, showers, laundry facilities, and sundries. Gift Shop 6/2 thru 9/12 – Store 5/22 thru 9/12

Lodge Dining Room & Greenstone Grill

Hearty meals, including fresh Lake Trout. Visitors welcome for breakfast, lunch, and dinner. Food service open daily, 6/2 thru 9/12.

Marina and Water Taxi

Offers 450 feet of dock space in Rock Harbor, accommodating boats up to 65 feet. Electrical, fresh water hook-up, sewage pump-out, gasoline, and diesel fuel, motorboat, canoe, and kayak rental available. Water taxi service drops off or picks-up visitors, canoes, or kayaks at many island docks. Available 5/22 thru 9/12.

Fishing Charters and Sightseeing

Charters are fully equipped. For details on sightseeing trips refer to page 4.

Windigo Store and Marina

Offers groceries, cold sandwiches, camping supplies, stove fuel, daily fishing licenses and tackle, gifts and photo supplies. The marina offers gasoline, pump-out service, and motorboat, canoe and kayak rental. Shower and laundry facilities available. Open 6/2 thru 9/7.

The cost for utilities on Isle Royale is much higher than on the mainland. A utility surcharge will be added to the cost of all goods and services.

Contact Information to the left. www.isleroyaleresort.com





Notes from the Singing Wilderness: Songbird Surveys

Sparrow, presenting a clear, bouncy voice, like the first vote in the raucous dawn congress that is about to ensue. Others will soon be casting their own ballot: an Alder Flycatcher, a Red-eyed Vireo, or maybe an American Robin. All will join the mounting morning chorus that is heard in a wave worldwide as the sun rises. Once a few species are singing, we must quickly finish eating, gulp our tea, pack our gear and head to the first survey point.

The singing is a little different in the first rays of light, a bit more strident and active, and it quickens our pace as we wonder who we will hear. Maybe a rarity, such as a Scarlet Tanager or a Great Crested Flycatcher, will be joining the familiar cast of characters? At each survey point along the trail we set down packs and quiet ourselves in order to focus on the array of birds singing all around. It can sometimes be confusing, with overlapping voices and birds moving

from tree to tree, but with deliberate, concentrated effort, and after years of careful study of bird song, we slowly transcribe the superb music around us. Bird vocalizations serve many functions: attracting a mate, repelling a rival, defining a territory, and warning of nearby predators. To people, their singing, may be a joyful addition to the environment around us, but for birds it is a serious matter.

At one point near Siskiwit Lake we may hear a Canada Warbler that, like an old acquaintance, has been heard there for the past decade. At another point on the Greenstone Ridge, we may notice that different species are present, and suddenly realize that the habitat has changed from a mature aspen stand to a sunny, shrub-dominated landscape as the old trees fall and moose browse the young shoots. Changes in bird-life help inform us about broader ecological transformations happening on the island.

As a unique, protected ecosystem, Isle Royale can offer valuable comparisons to human-dominated landscapes across the Great Lakes region. Lake Superior both dominates and moderates the climate of Isle Royale, so changes in the lake could influence island ecosystems. A recent discovery that the summer temperatures of the lake warmed about 5°F in the past 30 years may be an indication that dramatic changes are coming for the island’s plant and animal life, including birds.

By midmorning the last survey point is completed. The birds are singing less as the day warms up, so we turn back for camp at a more leisurely pace. After lunch we head for the next campground, hoping for good weather the next morning so we can repeat our early wake up call with the bright song of a White-throated Sparrow.

Alexander Egan
Biological Science Technician

A Day in the Life: Monitoring Water Quality on Isle Royale

When the work day starts before 8:00 AM, it means a long day ahead. Collecting water samples from Lake Desor requires a two-hour boat ride to a small cove southwest of Thomsonite Beach, dropping a canoe over the side and paddling to shore, then carrying the canoe and the sampling equipment over the Minong Ridge (off trail). By the time we get to the lake, it’s almost noon, and we haven’t even started sampling yet!

Conducting water quality monitoring on Isle Royale’s inland lakes is a job that calls on all sorts of outdoor skills. A person also must know something about limnology and water chemistry, how to process water samples in the laboratory, and be tech-savvy enough to use the multi-probe data collection unit. Why do we do it? Because water is the essence of Isle Royale and the eight other national parks in the Great Lakes Inventory and Monitoring Network, so water quality is an important issue.

The Network is composed of nine parks in Minnesota, Wisconsin, Michigan, and Indiana, and a central office. Biologists at the Network office and resource managers in the parks have developed long-term monitoring programs for select

natural resources. The water quality monitoring program is intended to help us understand the “health” of inland lakes and provide insights to potential water resources issues. Plus, by doing the sampling the same way in each of the parks, we can examine trends across the entire Network.

On Isle Royale, nine lakes were chosen: Ahmik, Beaver, Desor, Feldtmann, George, Harvey, Richie, Sargent, and Siskiwit. Each lake is sampled three times a summer. A canoe is paddled to the deepest known spot in the lake, and a multi-probe instrument is lowered to record things like temperature, pH, conductivity, and dissolved oxygen at regular intervals until the bottom is reached. Water samples are collected and later analyzed in a laboratory to measure chemical features of the lakes. So that off-trail portage into Lake Desor I mentioned? On the way out, we have the canoe, the gear, and water samples – a big load.

In 2007, a thick bloom of *Lyngbya gerbirea* (a cyanobacterium) in Lake Richie affected both the water chemistry and the ability of light to penetrate the water. If you were at Lake Richie that year, you might have observed the pea-soup colored water. In August, pH readings were high (indicating low acidity) and a large

oxygen-deficient zone developed that probably created inhospitable conditions for aquatic life across most of the lake. Interestingly, there was not a *Lyngbya* bloom in Lake Richie in 2008. We suspect warmer temperatures and decreased rainfall in the spring of 2007 led to conditions that favored *Lyngbya*, such as early ice-off, warm water temperatures, and lack of new water flushing the lake. We may see similar conditions more often if predictions of global climate change are accurate.

Water quality monitoring on Isle Royale is continuing. This helps resource managers to know what is happening in Isle Royale lakes, and may lead to new and interesting research questions. But after the long day, I am just happy to arrive at Amygdaloid Island, where we will stay for the night. Tomorrow, we will sample Lake Harvey, another long off-trail portage, so a good night’s sleep is also something a person should have if they monitor water quality on Isle Royale.



Water quality technician, Charly Kearns, lowers a Secchi disk into Lake Desor to measure water clarity.

Ted Gostomski and Valena Hofman
Great Lakes Inventory
and Monitoring Network

To learn more about the Great Lakes Inventory and Monitoring Network visit:

<http://science.nature.nps.gov/im/units/glkn/>

Interpretive Activities

Enjoyable and educational programs are offered on Isle Royale at Rock Harbor, Daisy Farm, and Windigo, and they are also presented on the National Park Service vessel, *Ranger III*. In addition, guided excursions explore such areas as Passage Island and

Lookout Louise near Rock Harbor. Ranger guided programs are free, although those involving the tour boat *MV Sandy* include a transportation fee. Check at local bulletin boards for further details. For outdoor activities,

dress for the possibility of cold or rain and wear sturdy footwear. Trails are slippery and muddy during or after wet weather; wear shoes with good ankle support, weatherproofing, and soles that grip well. Come join us!

- All times are Eastern Daylight Time
- \$ = transportation cost
- ** = indicates tours with a park ranger

ROCK HARBOR AREA	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Rock Harbor Visitor Center Information, books, maps, educational sales materials, camping permits, dive permits, user fee payments, and Jr. Ranger Program.			Daily 8:00 a.m. to 8:00 p.m. – July and August Reduced schedule in May, June, and September				
Interpretive Programs Join a park representative for an exploration of Isle Royale’s natural and cultural history.			Check the bulletin board for program schedule.				
MV SANDY TOURS FROM ROCK HARBOR	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
The trails on guided tours are rocky and uneven with some steep climbs and descents; trails may be slippery. Be prepared for cold temperatures and the possibility of rain.	For all tours and programs involving the <i>MV Sandy</i> , obtain tickets and information at the Lodge Registration Office. <i>MV Sandy</i> Tours will operate from June 2 through September 12. Fare rates for the various tours are available at the Rock Harbor Lodge and Rock Harbor Visitor Center; children under 12 are charged half-price for the <i>MV Sandy</i> .						
Hidden Lake/Lookout Louise (\$)** Greenstone Shuttle A 4-mile boat trip on the <i>MV Sandy</i> to Hidden Lake Trailhead followed by a guided 2-mile round trip hike past Hidden Lake up 320 feet to Lookout Louise. View the south shore of Canada and the north shore of Isle Royale. Return with the group or bring a lunch and water and hike 9.4 miles back to Rock Harbor.			9:00 a.m. to 12:30 p.m.		9:00 a.m. to 12:30 p.m.		
Passage Island (\$)** An 8-mile boat tour on the <i>MV Sandy</i> crosses one of Isle Royale’s popular shipping lanes. The 2-mile guided round-trip hike leads to Passage Island Lighthouse and explores an area of low moose presence.		1:30 p.m. to 6:00 p.m.				1:30 p.m. to 6:00 p.m.	
North Side Cruise/Minong Mine (\$) Cruise two hours each way along Isle Royale’s north shore bays. Pass Blake Point and Amygdaloid Island, with a possible stop at Belle Isle. A guide may be available to lead a 3-mile hike from McCargoe Cove to the historic Minong Mine. The hike includes difficult walking over steep piles of loose rock on an unmaintained trail. Trip may include a hike to Pine Mountain, offering excellent views of the Canadian shoreline. Bring lunch and beverage.				9:00 a.m. to 5:30 p.m.			
Edisen Fishery and Rock Harbor Light (\$) Visit the historic commercial fishery with the resident fishery demonstrator and take a quarter-mile walk to the oldest lighthouse (1855) on Isle Royale and enjoy its maritime exhibits.					2:00 p.m. to 6:00 p.m.		9:00 a.m. to 1:30 p.m.
Captain’s Cruise (\$) Explore with the Captain of the <i>MV Sandy</i> , scenic, out-of-the-way destinations, such as Middle Island Passage, Lorelei Lane, Rock Harbor Lighthouse, Davidson Island, and Starvation Point.			2:00 p.m. to 5:30 p.m.				
Raspberry Island/Sunset Cruise (\$) Take a walk along a boardwalk through the spruce bog on Raspberry Island followed by a cruise on the <i>MV Sandy</i> around Scoville and Blake Points to view features like the Canada shoreline, the site of the <i>Monarch</i> shipwreck, and a Lake Superior sunset (after Aug. 15, cruise only).			8:00 p.m. to Sunset in June-July 7:30 p.m. to Sunset in August-September			8:00 p.m. to Sunset in June-July 7:30 p.m. to Sunset in August-September	
DAISY FARM	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Interpretive Programs Join a park representative for an exploration of Isle Royale’s natural and cultural history.			Check the campground bulletin board for program schedule.				
WINDIGO	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Windigo Visitor Center Information, books, maps, educational sales materials, camping permits, dive permits, user fee payments, and Jr. Ranger Program.			Daily 8:00 a.m. to 6:00 p.m. – July and August Reduced schedule in May, June, and September				
Interpretive Programs Join a park representative for an exploration of Isle Royale’s natural and cultural history.			Check the bulletin board for program schedule.				
HOUGHTON	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Houghton Information, trip planning, books, maps, and other educational sales materials, <i>Ranger III</i> and group camping reservations, boater camping permits, dive permits, and user fee payments.		Open year-round, Monday through Friday 8:00 a.m. to 4:30 p.m., closed for fall and winter holidays. 6/2 through 8/15 open 8:00 a.m. to 6:00 p.m. Monday through Friday, Saturday 11:00 a.m. to 6:00 p.m. 8/17 through 9/12 open 8:00 a.m. to 4:30 p.m. Monday through Friday, Saturday 2:00 p.m. to 4:30 p.m.					
RANGER III	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Interpretive and Educational Programs While onboard, park staff and guest speakers, weather permitting, will explore Isle Royale’s natural and cultural history or topics related to the Lake Superior Basin. Park staff will assist in trip planning, answering questions, and issuing backcountry camping permits.			9:00 a.m. to 2:00 p.m. 6/2 thru 9/8	9:00 a.m. to 2:00 p.m. 6/3 through 9/9		9:00 a.m. to 2:00 p.m. 6/5 thru 9/11	9:00 a.m. to 2:00 p.m. 6/6 through 9/12



Wilderness Use

During Isle Royale's early history, visitors risked much to get there. They did not come to vacation; they came to tame the wilderness through mining its copper, harvesting its fish, and logging its timber. The island was never tamed, the resource never conquered, but its landscape holds the scars of these early attempts. Today Isle Royale has reverted back to a primitive wilderness. The environmental conditions historically viewed as a burden are now attracting a new clientele. Today's visitors, as in the past, can still adversely affect this sensitive resource. To minimize your impact on park resources and other visitors, please practice "Leave No Trace" (for additional information request a copy of the park's Leave No Trace booklet or visit www.lnt.org). Where you place your feet is as important as how you treat and dispose of waste. Be part of the solution: help maintain the sense of solitude and preserve the wilderness flavor, a flavor that has the potential to change your life. Proper wilderness use begins with reading, supporting, and putting into practice the following information.

Camping

Permits are required for all overnight stays at campgrounds, cross-country sites, docks, or at anchor, regardless of group size or method of travel.

Party Size Defined

The party size for camping at Isle Royale is divided into two categories. "Individual" parties are defined as a group of six or fewer people. "Group" parties are defined as seven to ten people. There are different requirements outlined below based on party size.

Individual Camping Permits — parties of six or fewer

Camping for individual parties is on a first-come, first-serve basis. Individual parties can obtain permits onboard the *Ranger III* or upon arrival at Rock Harbor or Windigo Visitor Centers. For trip planning assistance, call (906) 482-0984; write to Isle Royale National Park, 800 East Lakeshore Drive, Houghton, Michigan 49931, or E-mail ISRO_ParkInfo@nps.gov.

Group Camping Permits — parties of seven to ten

Advance reservations are required for group camping. For reservations and trip planning assistance call (906) 482-0984; write to Group Reservations, Isle Royale National Park, 800 East Lakeshore Drive, Houghton, Michigan 49931, or E-mail ISRO_GroupReserve@nps.gov or make reservations on-line at <https://www.pasty.com/isro/nps2.php>. If your party exceeds ten people, you must split into two groups, each independent and traveling on completely separate itineraries. Groups shall camp in group tent site locations only (see chart on page six). Group leaders shall carry medical information for each group member including known allergies, known medical conditions, and medications currently taken. Organizations may not have more than twenty people camping on the island at any one time and are limited to eighty people per year.

For additional information, refer to the park's Group Camping brochure.

Where to Camp

All campsites on Isle Royale offer tent sites and/or three-sided shelters. Shelter and tent sites are available on a first-come, first-serve basis. Shelters may not be reserved and may not be used solely for cooking or storage of gear. Tents may not be erected at shelter sites. Be gentle with screen doors on shelters to minimize intrusive noise and to prevent damage.

Expect crowded conditions at park campsites during mid-July through August. When sites are full, we ask campers to double up and share empty tent pad space.

Campers must stay in established campsites unless off-trail (cross-country) arrangements are made at the time the permit is obtained. Off-trail hiking and camping is difficult at Isle Royale, and is only recommended for experienced campers.

Commercial Groups

Organizations that charge trip participants a fee or that compensate members or trip leaders in any way are commercial groups under federal law. This applies to both non-profit and for-profit organizations. Commercial groups must apply for and receive a Commercial Use License to conduct trips in the park. There is a fee for this permit. Applications are only accepted between January 2 and May 15; contact the park at (906) 482-0984.

"Quiet, Please"

Most visitors come to Isle Royale to hear the sounds of nature in a wild setting. Excessive human noise disturbs wildlife and other visitors. Sound travels easily over the water and on the trail. During quiet hours, between 10:00 p.m. and 6:00 a.m. EDT, if people in adjacent campsites can hear your activities, you are being too loud.

Respect Wildlife

Observe, photograph, and enjoy park wildlife from a safe distance. Use binoculars or a zoom lens "to get closer" to wildlife. If animals flee, become defensive, or change their natural activities in your presence, you are too close! Loons are especially susceptible to disturbance, and may abandon their nests when approached too closely by boats. Cow moose with calves, particularly in the spring, and bull moose during the fall rut can be dangerous; give them a wide berth.

Keep wild animals wild by discouraging them from approaching humans. Practice proper food storage and keep a clean camp. It is illegal to feed, touch, tease, or intentionally disturb wildlife, their homes, nests, or activities. Animals, particularly fox and otter, when habituated to human food, may eventually overcome their natural wariness of humans and may have to be destroyed.

Human Waste

Proper disposal of human waste helps prevent pollution of water sources, minimizes aesthetic impacts to other visitors and reduces the spread of illness. Never defecate within 200 feet (at least 75 steps) of lakes, streams, trails, gullies, or campsites. In areas without outhouses, select a site that visitors are unlikely to discover. With a small trowel, dig a "cathole" 6 to 8 inches

deep and 4 to 6 inches in diameter. Place used toilet paper and fecal material in the hole. Use toilet paper sparingly. After use, cover the "cathole" with the excavated soil and disguise it with natural materials. Urinate on durable surfaces away from campsites and water sources. Pack out all used feminine-hygiene products, carrying them in plastic bags, doubled to confine odor.

Showers

The concession operation offers token-operated shower facilities at Rock Harbor (5/22 – 9/12) and Windigo (6/2 – 9/7).

Waste Water Disposal

Cleaning Cookware

Most cookware can be cleaned with hot water, a little elbow grease, and sand or other natural scrubbers. Clean cookware at least 200 feet (75 steps) from lakes, streams, trails, gullies, or campsites. Soap is unnecessary for most dishwashing jobs. Even biodegradable soaps take a long time to degrade. Use these products sparingly and keep them at least 200 feet (75 steps) from water sources and campsites. Use a small strainer or screen to remove food bits from the water and pack them out with your garbage. The remaining gray water should be scattered or broadcast over a wide area away from camps and water sources.

Bathing/Cleaning Clothes

When bathing use soap only if necessary and use it sparingly. Get wet, if used - apply soap, and rinse on land at least 200 feet (75 steps) away from water sources or campsites. Rinse water can be carried in collapsible containers or pots. Clothes can be cleaned by taking them away from water sources and campsites and thoroughly rinsing them with plain water.

Drinking Water

Potable water is only available at Rock Harbor and Windigo. All surface lake and stream water should be considered contaminated with natural parasites. Drinking contaminated water can make you very sick. Water collected in the park should be boiled for at least one minute or passed through a 0.4 micron water filter followed by chemical treatment. To be assured of no risk of contamination from small bacteria and viruses, all filtered water should be chemically treated. By itself, chemical treatment or filtering is not an effective method of water purification. If you boil your water, bring plenty of stove fuel. If filtering, bring a replacement cartridge for those filters that cannot be cleaned in the field. If you filter water from Lake Superior, change your filter or backflush several times with filtered water before using inland – this will assist in keeping Superior's invasive species from entering the inland lakes.

Precautions should be taken to prevent filters from becoming clogged. Filter water from a pot rather than directly from a lake or creek. Allow the sediment in the pot to settle and filter only from the cleaner water on top.

Dehydration is a factor in most medical problems experienced in the park. In hot weather the Greenstone, Minong, and other trails become hot and dry, and creeks that once offered water may be dry. In addition, there is little or no dependable water available along many trails. To avoid

dehydration, be sure to carry a minimum of 2 quarts of water per person. Drink as much water as possible while near water sources. Start hiking early before the day heats up – on ridges it starts getting hot at 10:00 a.m. on sunny days and gets hotter through late afternoon. Hike at a slower pace than usual and rest in shady spots. Dehydration is also a problem in cold weather as most people don't feel thirsty and tend to drink less. Watch for mild signs of dehydration such as thirst, fatigue, headache and dizziness. Signs of severe dehydration include nausea, reduced or no sweating, long stretches without urinating.

Drinking Water Notice

In 2007, blue-green algae blooms occurred in Lake Richie and Chickenbone Lake. Blue-green algae blooms can be toxic, but due to the large variety of blue-green algae species and individual conditions of each bloom, we can't predict if a particular bloom is toxic or not. Filtering does not remove blue-green toxins from the water. Exposure to a toxic bloom can cause a range of symptoms from skin irritation to more serious gastrointestinal or respiratory problems. To be safe, the park recommends that you avoid swimming or filtering water if it appears to have a cloudy blue-green cast, or look's like "pea soup" or green paint. If you see an algae bloom while in the backcountry, please report it to visitor center staff. If algae blooms occur in the future, we will have the latest occurrence information available at our visitor centers. For more information on blue-green algae, visit the MN Pollution Control Agency website, <http://www.pca.state.mn.us/water/clmp-toxicalgae.html>

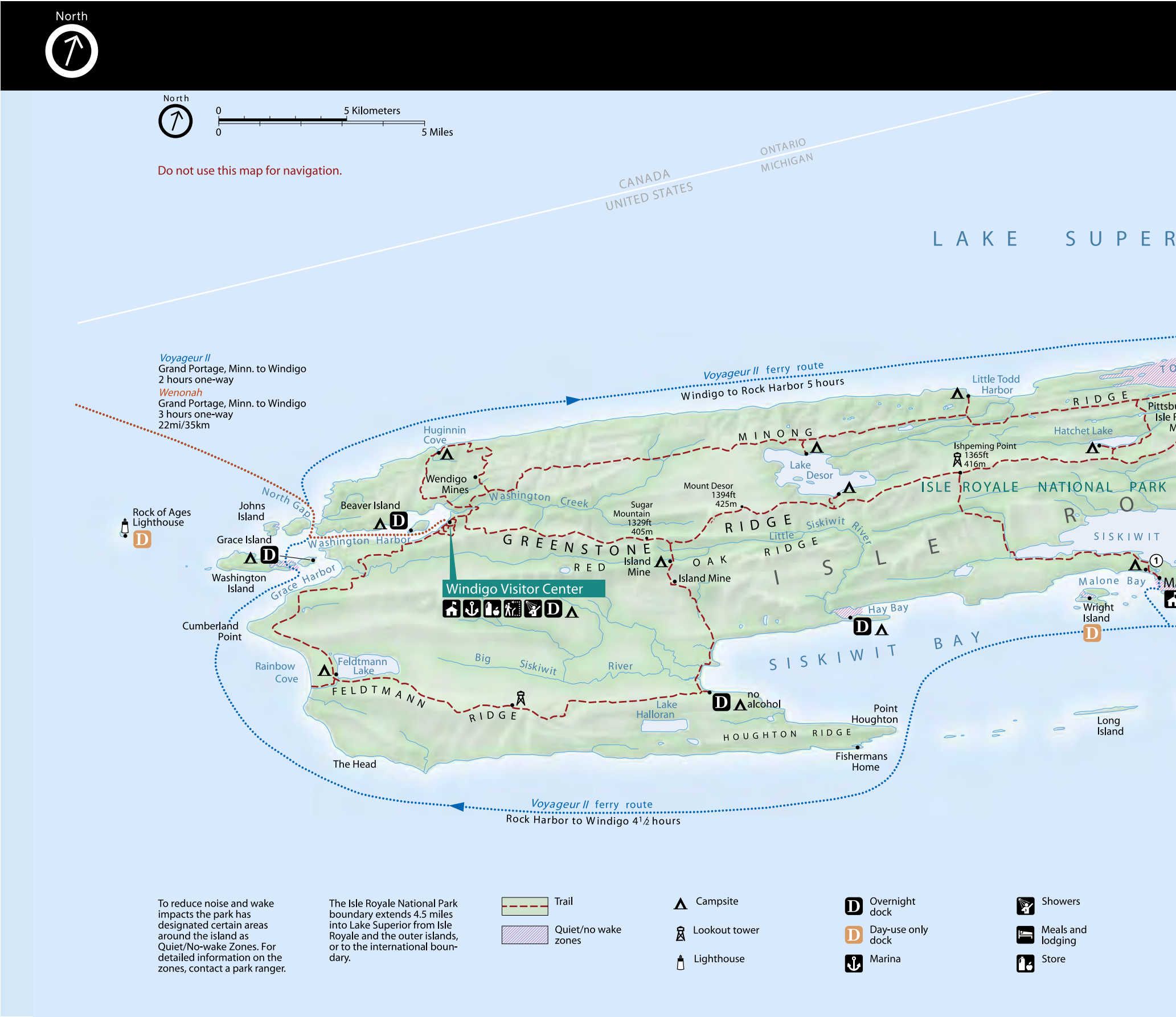
Hantavirus

There have been no reported cases of Hantavirus at Isle Royale National Park. The deer mouse is the primary carrier of the virus. An infected mouse carries the virus in its urine, saliva, feces, and in the carcass. The primary way humans become infected is through breathing in the virus. Infection can also occur by touching the mouth or nose after handling contaminated materials.

To minimize risk, avoid coming into contact with rodent droppings and burrows, avoid sleeping on bare ground, and store food and garbage in rodent-proof containers. For additional information on Hantavirus contact the Centers for Disease Control and Prevention at 800-532-9929.

Pack It In, Pack It Out

It starts at home. Through careful meal planning and repackaging of food items, you can reduce food leftovers and trash in the backcountry. Please pack out everything you take in. Leftover food, food-scrap, orange peels, nutshells, apple cores, twist-ties, candy wrappers, fishing line, and cigarette butts must be packed out. If you have food leftovers, either save and eat them later or pack them out. Do not burn, bury or place trash, food scraps or garbage in outhouses. Please help keep the backcountry clean by packing out what you packed in.

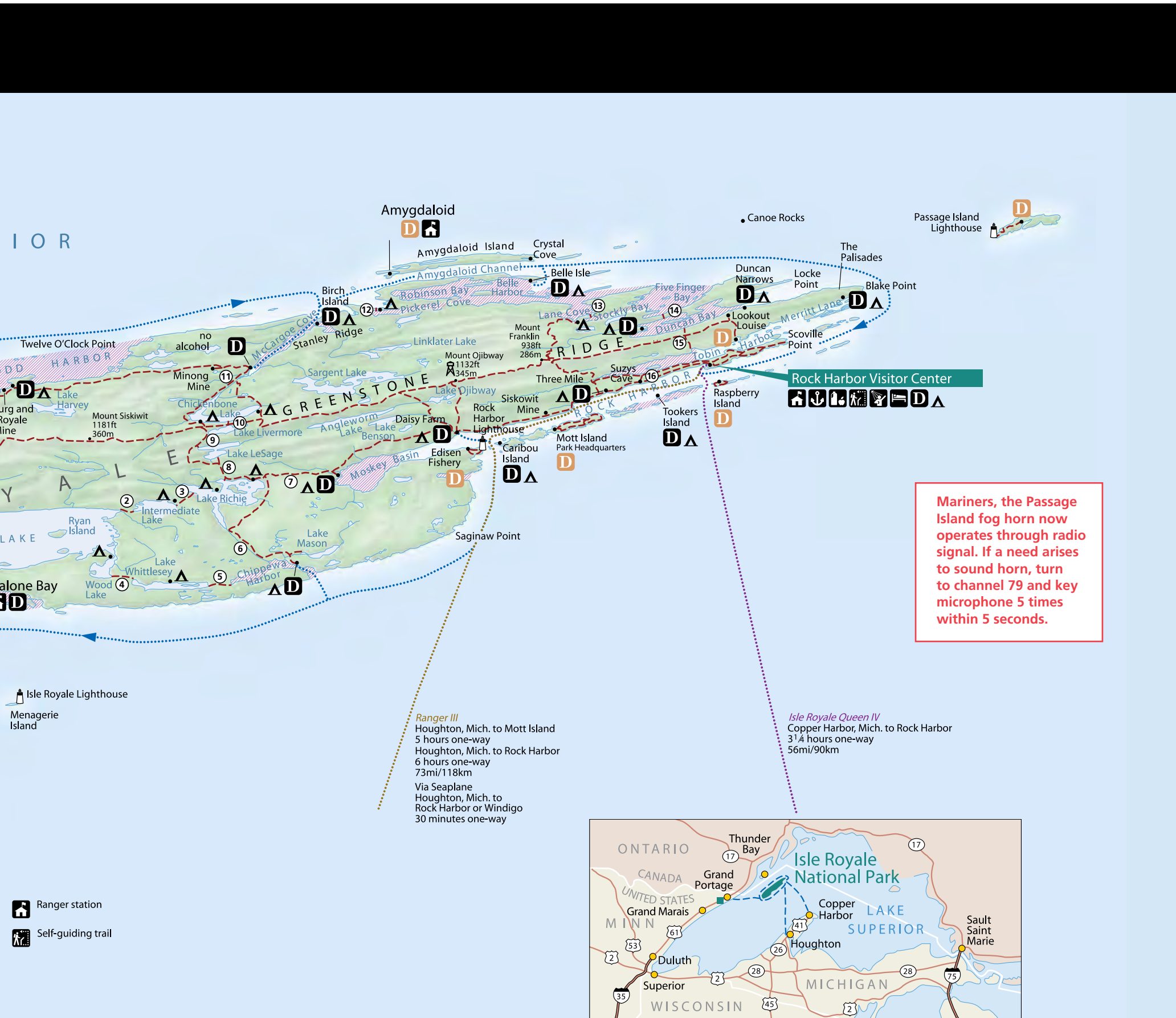


CAMPGROUNDS								
WARNING: Depth at dock. Know your boat's draft.								
KEY: CR - Fires in community ring only S - Self-contained stoves only W - Treated water supply F - Campfires allowed or standing grills provided A - No Alcohol								
	Consecutive Night's Stay Limit Effective 6/1 - Labor Day	Individual Tent Sites	Shelters	Group Tent Sites	Special Information	Normal Conditions Depth at Dock** in Feet**	On-board Generator Use Permitted*	
■ Beaver Island	3	0	3	0	S	2'-5'	yes	
■ Belle Isle	5	1	6	0	F	13'	yes	
■ Birch Island	3	1	1	0	S	5'	no	
■ Caribou Island	3	1	2	0	CR	10'	yes	
■ Chickenbone E.	2	3	0	1	S	-	-	
■ Chickenbone W.	2	6	0	3	S	-	-	
■ Chippewa Harbor	3	2	4	1	F	7'	no	
■ Daisy Farm	3	6	16	3	S	9'	no	
■ Desor N.	2	3	0	0	S	-	-	
■ Desor S.	2	7	0	3	S	-	-	
■ Duncan Bay	3	1	2	0	F	6'	no	
■ Duncan Narrows	3	1	2	0	F	6'	no	
■ Feldtmann Lake	2	5	0	2	S	-	-	
■ Grace Island	3	0	2	0	S	2'-4'	yes	
■ Hatchet Lake	2	5	0	3	S	-	-	
■ Hay Bay	3	1	0	0	S	3'-7'	yes	
■ Huginnin Cove	3	5	0	0	S	-	-	
■ Intermediate Lake	2	3	0	0	S	-	-	
■ Island Mine	3	4	0	2	F	-	-	
■ Lake Richie	2	4	0	2	S	-	-	
■ Lake Richie/Canoe	2	3	0	0	S	-	-	
■ Lake Whittlesey	2	3	0	0	S	-	-	
■ Lane Cove	3	5	0	0	S	-	-	
■ Little Todd	2	4	0	0	F	-	-	
■ Malone Bay	3	0	5	2	F	3'-6'	yes	
■ McCargoe Cove	3	3	6	3	CR-A	7'	no	
■ Merritt Lane	3	1	1	0	S	8'	no	
■ Moskey Basin	3	2	6	2	S	8'	no	
■ Pickerel Cove	2	1	0	0	S	-	-	
■ Rock Harbor	1	11	9	3	W-S	-	-	
■ Rock Harbor Marina	Unlimited	-	-	-	F	3'-12'	yes	
■ Siskiwit Bay	3	4	2	3	CR-A	2'-6'	no	
■ Three Mile	1	4	8	3	S	9'	no	
■ Todd Harbor	3	5	1	3	CR	2'	no	
■ Tookers Island	3	0	2	0	S	7'	no	
■ Washington Creek	3	5	10	4	S-W	-	-	
■ Windigo Dock	5	-	-	-	S	4'-20'	yes	
■ Wood Lake	2	3	0	0	S	-	-	

CANOE PORTAGES

Distance	Elevation-Change	General Comment
① Malone Bay - Siskiwit Lake	-.3 miles, 40'	Gradual Slope
② Siskiwit Lake - Intermediate Lake	-.4 miles, 40'	Gradual
③ Intermediate Lake - Lake Richie	-.6 miles, 120'	Hilly and wooded
④ Wood Lake - Lake Whittlesey	-.6 miles, 80'	Rolling
⑤ Lake Whittlesey - Chippewa Harbor	-.6 miles, 140'	Steep grades and rocky
⑥ Chippewa Harbor - Lake Richie	-1.2 miles, 160'	Hilly
⑦ Moskey Basin - Lake Richie	-2.0 miles, 120'	Gradual but very long
⑧ Lake Richie - Lake LeSage	-.6 miles, 100'	Steep grades, wet
⑨ Lake LeSage - Lake Livermore	-.4 miles, 80'	Steep grades, wet
⑩ Lake Livermore - Chickenbone Lake	-.2 miles, 40'	Steep but short
⑪ Chickenbone Lake - McCargoe Cove	-.7 miles, 80'	Hilly
⑫ Pickerel Cove	-.1 miles, 10'	Short and sweet
⑬ Lane Cove - Stockly Bay	-.1 mile, 8'	Short and sweet
⑭ Five Finger Bay - Duncan Bay	-.2 miles, 8'	Short and sweet
⑮ Duncan Bay - Tobin Harbor	-.8 miles, 175'	Extremely steep
⑯ Tobin Harbor - Rock Harbor	-.2 miles, 40'	Up and over

NOTE: Because of Isle Royale's geology, north-facing slopes are much steeper than south-facing slopes.



Mariners, the Passage Island fog horn now operates through radio signal. If a need arises to sound horn, turn to channel 79 and key microphone 5 times within 5 seconds.

SAFETY TIPS

The island’s Wilderness and Lake Superior present challenges and potential hazards to the inexperienced or ill-prepared.

- Basic emergency services are available on the island, but contacting rangers for assistance can be difficult. Emergency response and evacuation may take time, requiring you to rely on your own skills and equipment. Most private boaters on Lake Superior have radios and can contact park rangers in an emergency.
- Bring a good first aid kit, a sufficient supply of any needed medications, and clothing appropriate for the time of year.
- Filter with chemical treatment or boil all surface water. Drink plenty of water. When dehydrated, you tire more quickly, don’t think clearly, and are more prone to fall.
- Weather and lake conditions can deteriorate quickly and unexpectedly. Hypothermia can occur any time of the year, especially near Lake Superior, where water and air temperatures are cool to cold year-round. Fog and waves can quickly create dangerous conditions for boaters, especially for paddlers.
- Many people underestimate hiking travel times and overestimate their abilities. Plan shorter, realistic travel days; don’t turn your wilderness trek into a forced march.

FISHING REGULATIONS

Species	Seasons	Minimum Size	Daily Possession Limit	Comment
Lake Trout, Rainbow Trout and Salmon Lake Superior and Siskiwit Lake	April 16 to October 31	10” except 15” for lake trout	5 in any combination, but no more than 3 of any one species	*1 *2 Artificial lures only on Siskiwit Lake*3 *4
Coaster Brook Trout Lake Superior	May 1 to Labor Day	N/A	Catch and release only in park’s Lake Superior waters.	*1 See Greenstone article page 10 for details *4
Brook Trout Streams and Hidden Lake	Last Saturday in April to Labor Day	N/A	Catch and release only — No possession allowed	Artificial lures *3 and barbless hooks *4 See Greenstone article page 10 for details
Rainbow Trout Streams		7”	5 fish with no more than 3 fish over 15”	
Yellow Perch Lake Superior and Inland Lakes	April 16 to October 31	No minimum size	50	Recommend daily limit of 10 *4
Northern Pike Lake Superior and Inland Lakes	May 15 to October 31	24” Lake Superior Inland Lakes - No minimum size, 30” maximum	5 in any combination, but no more than 2 Northern Pike	Artificial lures only on interior lakes *3 and streams *4 See Greenstone article page 10 for details
Walleye Lake Superior and Inland Lakes		15”		

For additional fish species, seasons, and creel limits, please review the Michigan Fishing Guide

- *1 Park boundaries extend 4.5 miles out into Lake Superior from the outermost land areas of the park.
- *2 For additional trout/salmon fishing information, review the Michigan Fishing Guide.
- *3 Artificial lure means any lure or fly manufactured in imitation of, or as a substitute for natural bait. It is unlawful to use or possess live bait, dead or preserved bait, organic or processed food, or scented material on interior lakes or streams.
- *4 Only barbless hooks may be used for fishing the park’s rivers, creeks, and streams, and all inland lakes. Barbed hooks are only allowed in Lake Superior waters.

Wilderness Use

Leave What You Find

Enjoy your discoveries and take them home via photographs, drawings, and memories. Natural objects of beauty or interest such as moose antlers, plants, driftwood, cultural or archeological resources, greenstones, agates, datolite and other minerals, including those found in Lake Superior must be left where they are so others can experience the same sense of discovery. Removing, possessing, or disturbing park resources is prohibited. This may seem like a harmless act, but the cumulative effect of many people doing the same can be quite damaging to park resources. Picking small quantities of berries and wild edibles for personal consumption is permitted.

Insects

Expect mosquitoes, black flies, gnats, and other insects to peak in June or July. During wet summers, mosquito populations can continue well into August. Bring insect repellent, netting, or other skin barriers. Dry summers will produce an abundance of yellow jackets. Bring an epinephrine kit if you or a member of your party is allergic to bee stings. For others, over-the-counter antihistamines may help counter minor swelling and itching.

Minimize Use of Fires

Campfires are permitted at only a handful of campgrounds. A backpacking stove is a must; these stoves are lightweight, dependable, easier to use, and less damaging to the park than wood fires. Twig-burning backpacking stoves are permitted. Where campfires are allowed, a metal fire ring is provided; never build your own ring. Gather only dead and down wood away from the camp area. **Do not import firewood; insects and pathogens from an infected wood source could devastate Isle Royale's forests.** Use small diameter wood no larger than an adult's wrist, as this will burn completely and will eliminate the need to pack a hatchet or saw. Collect wood from a wide area and away from the immediate vicinity of camp. This keeps the camp area from becoming depleted of wood and potential nutrients. Do not break branches or strip bark from standing trees, live or dead. Resist the temptation to gather driftwood or wood from beaver dams or lodges. Do not burn trash in any form. The fire should be kept small. Once finished, make sure the flames and coals are dead out and cold to the touch; double check before going to bed or leaving camp.

Canoeing/Kayaking

Lake Superior is well known for its cold temperatures, fog, and sudden squalls that can generate waves that could easily swamp a canoe. This along with scarce outer shore landing sites adds to the potential danger. Small, open vessels are encouraged to use the numerous miles of waterways that the inland lakes provide. Canoeists and kayakers should be familiar with weather patterns and consult the marine forecast at visitor centers before embarking. Be prepared to adjust your schedule to the weather. A portable marine radio is recommended.

Portages –

Canoe routes and portages are on the northeast half of the Island. Portages are marked with a letter “P” on a post.

PFD –

Every canoeist and kayaker must have a U.S. Coast Guard approved personal flotation device. Wear it; your life may depend on it.

Boat Rental –

Canoe, kayak, and motorboat rentals are available at Windigo and Rock Harbor. For more information contact the Rock Harbor Lodge. (refer to page 2).

Loons

Isle Royale National Park is the summer home for over 100 nesting pairs of Common Loons, supporting the only known population which still breeds on Great Lakes waters. These birds nest on land very close to the shoreline, making them highly susceptible to human disturbance. An adult loon who tremolos (the laughing call) is sending a message that you are too close. From mid-May through July 15 (loon nesting season) visitors are to stay at least 150 feet away from small islands. Additional areas may be closed due to loon nesting, please check at the visitor centers for updated information.

Non-Native Species

Isle Royale waters, like all Lake Superior waters, face a growing threat from the invasion of non-native species. Once species like sea lamprey, zebra mussels, or spiny water fleas enter an area, they cause large-scale changes in the ecosystem.

Two invasive species, the sea lamprey and the spiny water flea, have already established a presence in Isle Royale waters. The spiny water flea presently is found only in Lake Superior. The park is concerned it may enter the inland lakes. Once established, its spines harm predator fish and they disrupt the zooplankton population, the basic food source for many fish species.

Zebra mussels have not established a presence on Isle Royale. Their potential to cause catastrophic change cannot be overstated. If zebra mussels were to enter the inland lakes it is estimated they would cover nearly every habitable surface on an inland lake floor within two years.

What can you do to stop the spread?

Boaters

Drain live wells and bilge on land - remove transom water, lake water, and unwanted bait from your boat - wash equipment with warm water and use a high-pressure sprayer or wait five days before launching for Isle Royale.

Backpackers

Prior to departure, clean your camping gear, clothing, and boots.

Canoeists and Kayakers

Remove weeds, algae, and other plant and animal materials from your boat - dry vessels before your island departure - clean and dry watercraft when moving from Lake Superior waters to inland lakes.

Anglers

Clean fishing gear before island departure - When moving from Lake Superior to inland lakes, clean gear and change line spools.

Divers

Wash all dive gear in warm chlorinated tap water - Disinfect your wetsuit with a special-purpose shampoo - dry all dive gear and wetsuit for seven days before island departure.

For additional information on invasive non-native species and the preventative measures that you can take - request the park's brochure “Aquatic Invaders: Stop the Spread & Spread the Word.” Also available online at www.irnha.org.

Wheeled Vehicles/ Devices

Wheeled vehicles (except for wheelchairs) or other mechanical forms of transportation are not allowed on trails. This includes bicycles and portaging devices.

Weapons, Traps, & Nets

The use or possession of weapons, traps, and nets is prohibited. Weapons include any implements designed to discharge a projectile or missile in the air or water. Fireworks are prohibited.

Pets

Dogs, cats, and other pets are not allowed. This includes pets on boats within the park boundaries, which extend 4.5 miles into Lake Superior from the outermost land areas of the park. Visitors bringing pets to Isle Royale will be required to leave immediately. Pets disturb wildlife and can transmit diseases, particularly to wolves. Special conditions apply to guide dogs. Please contact the park for further information.

Boating

All boaters staying overnight at anchor, at docks, or in campgrounds must first obtain a camping permit. Lake Superior offers challenging and often dangerous weather in the form of dense fog, high winds, waves, and thunderstorms. Combine this with rocky reefs, limited safe harbors, and Isle Royale's remoteness, and it pays for you, your crew, and your boat to be shipshape. For additional information on boating and trip planning please request the park's Isle Royale Boating Guide. **In addition to Houghton, Rock Harbor, and Windigo, boaters may obtain Isle Royale camping permits and pay user fees while using our on-line service at <https://www.pasty.com/isro/nps.php>. Please note: the U.S. Forest Service Ranger Station in Grand Marais, Minnesota has discontinued processing permits and collecting fees for Isle Royale National Park.**

Restricted Water Activities –

Water skiing and personal watercraft including vessels commonly referred to as jet skis, waverunners, sea-doo's, wet bikes, or surf jets are prohibited. Since all of the park's inland lakes are located within designated Wilderness, they can only be explored by paddling. Vessels with motors (even if not in use) are prohibited on inland lakes and streams.

Portable Generators, Electronic and Motorized Devices –

Operation of electronic and motorized devices such as stereos, televisions, radios tuned to commercial stations and portable generators is not permitted except in developed and open-water motorized zones. Developed areas include the Windigo and Rock Harbor developed areas, and the Mott Island Headquarters area. Open water motorized zones include Lake Superior waters outside of designated “quiet/no wake waters”.

On-Board Generators –

The operation or use of permanently installed (by the boat manufacturer) on-board vessel generators is allowed between 6:00 a.m. and 10:00 p.m. Eastern Daylight Time in developed zones and at the following docks: Beaver Island, Belle Isle, Caribou Island, Grace Island, Hay Bay, Malone Bay, Rock Harbor, and Windigo. On-board generators may not be operated or used at the following public docks: Birch Island, Chippewa Harbor, Daisy Farm, Duncan Bay, Duncan Narrows, McCargoe Cove, Merritt Lane, Moskey Basin, Siskiwit Bay, Three Mile, Todd Harbor, and Tookers Island. Vessels at anchor within Quiet/No Wake Zones may operate on-board generators between 6:00 a.m. and 10:00 p.m. Eastern Daylight Time, except when anchored within 1/4-mile of a designated park campground.

Quiet/No Wake Zones –

These zones promote a quality visitor experience by providing relatively tranquil, natural marine surroundings. Within the zone, vessels must not exceed 5 mph or create a wake in excess of surrounding seas. Quiet/No Wake Zones include specified areas near Todd Harbor, Johns Island, Barnum/Washington Islands, Hay Bay, Wright Island, Malone Bay, Chippewa Harbor, Conglomerate Bay, Moskey Basin, Lorelei Lane, Tobin Harbor, Merritt Lane, Passage Island, Duncan Bay, Five Finger Bay, Lane Cove, Robinson Bay, Pickerel Cove, Belle Harbor, Crystal Cove, and McCargoe Cove. Consult boater's maps and brochures available at visitor centers and on-board the *Ranger III* for specific information.

Alcohol Ban –

Open containers of alcohol are prohibited in campgrounds, on docks, and onboard docked vessels at both Siskiwit Bay and McCargoe Cove.

Pollution Prevention –

Head pump-out service is available at Windigo and Rock Harbor when the concession operation is open. Vessels carrying spare fuel in portable containers must use legally approved containers. Fuel may not be stored on docks.

Customs –

All vessels arriving from Canada (U.S. or Canadian) must clear U.S. customs at Windigo or Rock Harbor Visitor Center. **As of 06/2009 a passport will be required.** For additional information go to www.cbp.gov.

Divers –

Please refer to your dive permit regulations concerning compressor use.

Fuel –

Gasoline is sold from June 2 through September 7 at Windigo; gasoline and diesel fuel are sold from May 22 through September 12 at Rock Harbor. Diesel fuel is not available at Windigo. Early and late season service or fuel may be obtained at Windigo and Mott Island if personnel are available.

Greg Blust

Supervisory Park Ranger

New Ways to Learn: Monitoring Moose Hair Loss

By far, the best known long-term research project on Isle Royale is the wolf/moose study. Better understanding of wolves and moose requires discovering new ways of observing - ways of observing that have not ever been thought of before.

THE CHALLENGE - How does a scientist know what to observe, and develop new ways of observing? The obvious ways of observing wolves and moose - counting wolves, counting moose, measuring predation rates, collecting moose bones, measuring plants that moose eat -- had long been in place by the year 2000.

FIELD NOTES - In the summer of 2000, I was determined to discover a new way of observing. I spent day after day at a swamp that moose commonly visit. I observed moose for hundreds of hours and wrote down everything I could think to record regardless of whether it seems valuable at that moment. From all those hours with moose, I recall wondering what in the world did the moose think I was all about? I wondered that about myself - would any of these notes be good for anything?

SYSTEMATIC OBSERVATION - By studying the observations, we realized the possibility of systematically monitoring the annual intensity of tick infestations on moose. Ticks might yield understanding about Isle Royale's moose.

Since that summer, we carry 3"x5" notecards with the blank profile of a moose. We photograph or diagram the profiles of as many moose as possible. Spring visitors to the park assist with the project by sharing photos of moose (taken without disturbing the animals of course), providing large quantities of data. Dark brown colors indicate good hair, white color shows broken hairs where the moose have been scratching and black areas are bare skin where no hair remains at all. From these images we quantify how much hair moose have lost to ticks - an indicator of tick loads. Only early season visitors to the park see moose in this condition, by mid-June the moose are sporting a shiny new coat.

SCIENTIFIC UNDERSTANDING - By 2007, we learned ticks had been high and on the rise - probably due to increasingly hot summers. High tick loads weaken moose, making them

vulnerable to wolf predation. Ticks may explain why moose have declined and wolves increased. And when moose decline, the forest has a chance to recover from heavy browsing. The wolf increase had been fueled by vulnerable moose. However, by 2007 moose became rare and wolves dropped from 30 to 21 - too much of a good thing. In time, we'll learn what aspects of this explanation require revision.

It is impressive to think that an entire ecosystem could be so affected by such a tiny creature. One also wonders why moose ticks have been so severe? It is likely that climate warming favors ticks.

Leah Vucetich
Wildlife Biologist
Michigan Technological University
To learn more about the wolf/moose study visit www.isleroyalewolf.org



About twenty years ago, with several winter studies behind me, I had snowshoed through deep snow from Wallace Lake and was waiting for a ski plane pickup. I had a spring scale with me and was curious how much my samples and gear weighed. I had a full-sized backpack with snow samples and scientific equipment, a good sized day pack full of soil and water samples, worn backwards over my chest for balance, and a large frozen precipitation sample in my arms - one hundred and ten pounds, 75% of my body weight!

A major change we have recorded over the past several decades has been warmer and drier winters. Since 1982, annual precipitation has declined on average about 1 cm per year, with 80% of the decline in winter. Most of the winter decline has occurred in November, which early in the study was the month of highest precipitation, mostly snow. Average November temperature has increased from -5C to +1C. The annual length of snow cover has declined and the day of peak spring runoff has come about one day earlier each year.

Watching the Watershed

Our small watershed studies began in 1982 and include watersheds on Isle Royale and Michigan's Upper Peninsula. A primary site is the Wallace Lake watershed. As well as measuring snow pack and precipitation, we collect water samples from the outflow and inflow of the lake and from the lake itself. We take samples from the surrounding soil. Using these samples, we are able to measure how nutrients move through the watershed.

In northern forests, snow has a huge influence on the ecosystem. Typically, soils remain unfrozen during the winter due to the insulating effect of the snow pack. On Isle Royale, the snow pack usually forms by mid-November and lasts through March or April. What happens when the snow pack forms later than normal or not at all? Or when the snow pack melts early?

Rain in late autumn and early winter can wash organic and inorganic compounds out of the soils. With a snow pack, these compounds stay in the soil and are slowly converted to nutrients, becoming available for new growth in the spring.

Shallow snow packs can lead to frozen soils. Freezing can fracture cell walls of microbes in the soil, causing death, but also releasing the cells' nutrients. This can cause large losses of nitrogen and carbon from the soil.

If soils remain frozen through the spring runoff, the snowmelt cannot percolate to deeper soils. This further increases the losses of nitrogen and carbon.

Earlier snowmelt allows more sunlight to reach the forest floor and produces warmer and dryer soils

during spring. With sufficient soil moisture, warmer soils emit more carbon dioxide.

These changes to the soil community affect the entire ecosystem. If this trend of increased carbon and nitrogen losses continues and is happening across the region, Lake Superior productivity and water quality may be affected. Information gathered from Wallace Lake may help describe the possible extent and impacts of climate changes to boreal and northern deciduous ecosystems on a larger scale. So the work continues.

Each winter, I stay at Daisy Farm for five to ten days; skiing to Wallace Lake as often as possible, pulling a small sled with my gear. The solitude reminds me of the importance of safety. A simple injury becomes serious when the weather is too nasty for a small plane and the closest folks are in the jet liners overhead. But the solitude is also the sweetest thing. You are alone, and I enjoy and respect that.

D. Toczydlowski
Research Scientist, Michigan
Technological University

New for 2009:

- **Barbless hooks only in all inland lakes, streams and creeks.**
- **No minimum size limit for Northern Pike in inland lakes, 30” maximum.**

Fishing at Isle Royale

A Michigan fishing license is required for fishing in Lake Superior, including narrow bays and harbors, and when transporting fish from the island to the mainland. If you are under 17 years of age, you may fish without a license. Licenses are not required to fish on the inland waters of Isle Royale; possession limits are the same as those set by the State of Michigan. **Also see additional information on this page regarding special brook trout regulations.** Anglers should refer to the Michigan fishing regulations for possession limits and detailed license requirements for Lake Superior (also see the chart on page 7 for a brief guide to regulations). Only 24-hour licenses are available on the island and only when concession services are open. You may purchase a Michigan fishing license online at www.michigan.gov/dnr.

Special Brook Trout Regulations

Recent surveys indicate populations are dangerously low and may be at risk of disappearing unless they have more protection. The National Park Service and Michigan DNR have implemented protective regulations at Isle Royale in order to help with the recovery of this once common fish.

Brook Trout can be identified by their nearly square tail and wormlike pattern on the back and dorsal fin. If you’re uncertain about the species you catch, return it to the water.

Lake Superior Waters
(extend 4.5 miles out from the island)
Catch and release only for all brook trout, including all bays and harbors.

Inland Waters
Catch and release only in all lakes, streams, and creeks. Only artificial lures and barbless hooks can be used in all lakes, streams, and creeks.

Viral Hemorrhagic Septicemia

Viral Hemorrhagic Septicemia (VHS) is an exotic virus that could have severe impacts on fish in the Great Lakes.

- VHS is a disease that may affect up to 37 fish species – Lake Trout and Coaster Brook Trout are at risk. The disease is often lethal, and can result in massive die-offs. Once VHS has invaded a body of water, there is no known way to eliminate it.
- VHS is in the lower Great Lakes, Lake St. Clair, and a few inland lakes of New York, Michigan, and Wisconsin. The virus has yet to be detected in Lake Superior.
- VHS does not affect humans, but humans are advised against consuming any fish suspected of carrying any disease. Fish that are affected by VHS may or may not show external signs such as red blotchy areas on the skin, redness near the base of fins,

and bulging eyes with redness around the eye. Internal organs such as the liver or spleen often show signs of hemorrhaging. **If you catch a fish with any of these signs at the park, please keep it, note the location and date that you caught it, and report it as soon as possible to a visitor center or park ranger.**

- Live and dead fish bait, fish parts, and fish eggs from infected fish are some of the ways that the disease can be transmitted to wild fish populations. Freezing, salting, or borax treatment of eggs does not kill the virus. **The possession or use of bait for fishing within the Lake Superior waters of the park is limited to those fish and / or fish parts that are caught within Isle Royale National Park waters. Transporting fish or fish parts for use as bait to the park is prohibited.**

- Boat water in bilges and live wells from waters where VHS is present can spread the disease. Boaters should empty their bilges and live wells prior to leaving a mainland port, and again before entering park waters. Please ask for any specific updated guidelines and regulations before your trip. **Boats being transported via the *Ranger III* must be decontaminated prior to being loaded at the Houghton dock.**
- The following websites provide information on VHS and how you can help.

Isle Royale National Park website:
<http://www.nps.gov/isro/>

Michigan Sea Grant:
<http://www.miseagrant.umich.edu/ais/fish-diseases.html>

Michigan DNR: <http://www.michigan.gov/dnr/0,1607,7-153-10364---,00.html>

Wisconsin DNR:
<http://dnr.wi.gov/fish/vhs>

Fishery Conservation

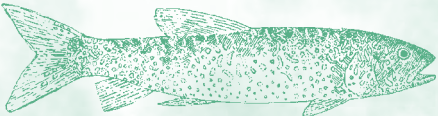
With its multitude of islands and bays on Lake Superior, as well as numerous lakes and streams on the interior of the island, Isle Royale provides many opportunities for outstanding recreational fishing for wild, native fish. **How can you help to conserve and minimize damage to the Isle Royale fishery?**

- Catch only what you plan to keep or eat. Catch and release, while encouraged, can be damaging and very stressful on fish.
- Know the minimum legal size of fish so that if they are too small they can be quickly released.
- If moving from Lake Superior to an inland lake, change to a different spool of line. This will help prevent spread of the spiny water-flea, an exotic aquatic invertebrate that competes with juvenile fish for food. It has been found in Lake Superior waters of the park but is not yet documented in inland waters. Spiny water fleas can adhere to fishing line and be easily spread to other bodies of water.
- Release larger fish and keep medium size fish to insure future productivity. Larger, more mature fish produce more offspring than smaller fish.
- Instead of killing trophy fish, consider a modern graphite mount produced from a picture of the fish.
- Return fish to the water as soon as possible. While unhooking them, keep fish in the water as much as possible.
- Try not to handle fish, but if you need to, do so with a wet hand. Release handled fish gently by allowing them to swim from your hands rather than throwing them back into the water.

- Do not squeeze the fish or place fingers in the gills, since a torn gill can cause the fish to bleed to death.
- Remove the hook gently. Pliers work best. Cut the line near the hook if a fish is deeply hooked. A steel hook will decompose in time.
- Use only artificial lures (required in inland waters) as exotic species can accidentally be introduced by using live bait and live bait are often swallowed deeper resulting in more damage to fish.
- Use single, barbless hooks or bend down the barbs on the hooks. Using larger spoons when fishing for larger fish will help prevent catching undersize fish.

Disposal of Fish Remains

At Rock Harbor, please use the fish cleaning station. At other locations, the preferred method is to dump remains chopped up into pieces 4” or less in deep (50’ or deeper) water. This reduces the unsightly remains and odors around campgrounds and the unnaturally large gathering of gulls at these sites. At inland lakes the preferred method of disposal is to chop fish remains into pieces 4” or less and deposit into deep water via canoe. If you do not have a canoe, you could request the assistance of a canoeist. The alternate method is to chop up remains into pieces 4” or less and move at least 200 feet (75 steps) from campground and throw remains as far as possible into deep water. These steps will eliminate the potential for attracting and feeding wildlife at campgrounds. Please clean fish away from docks and campgrounds. Do not throw remains in shallow water near shore or throw remains to gulls or other animals.



Transporting Fish to the Mainland

You are allowed only one day’s catch in your possession. While the license holder remains on the Island, Michigan Department of Natural Resources (DNR) allows those with DNR permits to ship legally-taken fish on the *Ranger III*, *Isle Royale Queen IV*, *Wenonah*, *Voyageur II* and the seaplane. This one-time per year permit covers up to a single day’s catch limit. Fish must be claimed when the ferry service arrives at their destination. Permits may be obtained by writing: Department of Natural Resources, 427 U.S. 41 North, Baraga, Michigan 49908-9627 or calling (906) 353-6651.

Fishermen returning on the *Ranger III* must check in their fish with the ship’s purser. Fish cannot be transported in coolers on private boats onboard the *Ranger III*.

Fish Consumption Advisory

Contaminants discovered in the Park ecosystem remind us that although Isle Royale is remote, it is part of a global system. Ongoing research in six inland lakes (Sargent, Siskiwit, Eva, Shesheeb, Wagejo, and Anglemworm) shows fish with mercury levels exceeding the State of Michigan fish consumption advisories.

For information on fish consumption advisories check with park staff or visit the Michigan Department of Community Health website at: <http://www.michigan.gov/mdch>

Jay Glase
Fishery Biologist

Transportation Services

Rates and schedules are subject to change.

FROM HOUGHTON, MICHIGAN



RANGER III

National Park Service owned and operated.

5 hours one-way to Mott Island and Windigo, 6 hours one-way to Rock Harbor, 165 ft., 128 passenger vessel

SCHEDULE (Eastern Daylight Time)

June 2 thru September 12
■ Houghton to Rock Harbor
Tues. & Fri. 9:00 a.m. (except June 26)
■ Rock Harbor to Houghton
Wed. & Sat. 9:00 a.m. (except June 27)
■ Windigo Day Trip Sat. June 27 only
Houghton to Windigo 8:00 a.m.
Windigo to Houghton 2:30 p.m.

Note: The *Ranger III* will run from Houghton to Rock Harbor on Thurs June 25 and Rock Harbor to Houghton on Fri June 26.

FARES ONE-WAY

Low Season Prior to 7/14 and after 8/15
Adults.....\$50.00
High Season 7/14 thru 8/15
Adults.....\$60.00

All Season
Children (7 thru 11 years)20.00
Children (age 6 and under)FREE
Boat (less than 18'01").....85.00
Boat (18'01" to 20'00").....137.50
Canoes/Kayaks (hand-loaded).....20.00
Canoes/Kayaks over 20'00" or 90 lbs.).....50.00
Outboard Motor.....15.00
100 lbs. gear per passengerFREE
Additional freight after 100 lbs\$9.00/100wt.

GROUP RATES ONE-WAY

(A party of seven or more)
Adults.....\$50.00
Children (7 thru 11 years)\$20.00

SPECIAL RATES

Windigo same day round-trip
Adult round-trip is \$50.00
Children round-trip is \$20.00
Ranger III Birthday Special
Adult round-trip of \$50.00, Children round-trip of \$20.00, if round-trip is scheduled between 6/16 and 6/20
Ranger III Lodge Packages
(1, 4, or 5 night stay, lodge only with meals)
June 2 thru July 3.....25% Passenger Discount
July 7 thru Sept 12.....20% Passenger Discount
For reservations contact the Rock Harbor Lodge at 866-644-2003.

RESERVATIONS
Full payment required for confirmed reservation. National Park User Fee is payable at time of ticket purchase. Major credit cards accepted. Reservations accepted on or after January 2.

CANCELLATIONS
Refunds, minus a 15% processing fee, if cancellation is received 3 days prior to sailing and tickets are returned. No refund within 3 days of sailing.

AMENITIES
Free parking • Largest of the ships • Crew of 9 • Two decks for passenger use • Three staterooms available • Ranger III Grill • Interpretive Programs • Backcountry Permits issued and orientation given onboard • Four lounges • Handicap Accessible Bathroom

FOR INFORMATION OR RESERVATIONS CONTACT

Isle Royale National Park
800 East Lakeshore Drive
Houghton, MI 49931-1869

On-line Reservations
<https://www.pasty.com/isro/nps3.php>

Phone: (906) 482-0984
Fax: (906) 482-8753
E-mail: ISRO_Ranger3Reserve@nps.gov
Website: www.nps.gov/isro

FROM COPPER HARBOR, MICHIGAN



ISLE ROYALE QUEEN IV

3 hours one-way, concession operated, 100 ft., 100 passenger vessel

SCHEDULE (Eastern Daylight Time)

■ Copper Harbor 8:00 a.m.
■ Rock Harbor 2:45 p.m.
5/15 thru 5/29..... M & F
6/1 thru 6/30 M, T, Th, F, Sat
7/1 thru 7/31 M, T, Th, F, Sat, Sun
8/1 thru 8/31 Every Day
9/1 thru 9/6..... M, T, Th, F, Sat, Sun
9/7 thru 9/28..... M & F

FARES ONE-WAY

5/15 thru 7/14 & 8/16 thru 9/29
Adults.....\$57.00
Children (1 thru 11).....28.50
7/15 thru 8/15
Adults.....\$64.00
Children (1 thru 11 years).....32.00
Infants (under 1 year).....FREE
Canoes/Kayaks25.00
Double Kayaks30.00
Motors (under 5 hp).....5.00
Motors (5 hp and over)15.00
Air Tanks (each)5.00
70 lbs. gear per person.....FREE

RESERVATIONS
A full-fare deposit is required for each reservation. All canoes and kayaks require advance reservations. Most credit cards accepted.

CANCELLATIONS
There is no refund if canceled less than 3 days before sailing. Cancellations received with more than 3 days notice will be sent an 85% refund. If canceling a group of 10 or more, two weeks notice is required.

MISCELLANEOUS
Parking fee • Limited snacks • Freight, canoes, etc. carried for our passengers only • Due to weight restrictions, luggage limited to 75 lbs. per passenger • Phone and letter reservations only
• Email and faxes are for information requests only
• The \$4 per day National Park User Fee is collected on the *Queen IV* as she sails to Isle Royale and is payable in cash, check, or money order only.
Motor Boaters be advised that the *Queen IV* is presently not equipped to carry motor boats. Boaters should contact the *Ranger III* for passage.

FOR INFORMATION OR RESERVATIONS CONTACT

The Isle Royale Line, Inc.
P.O. Box 24, Copper Harbor, MI 49918
Phone: (906) 289-4437
Fax: (906) 289-4952
E-mail: Captaink@pasty.net
Website: www.isleroyale.com

FROM GRAND PORTAGE, MINNESOTA



VOYAGEUR II

Grand Portage to Windigo - 2 hours one-way, Windigo to Rock Harbor - 5 hours one-way, concession operated, 60 ft. vessel

SCHEDULE (Central Daylight Time)

■ Grand Portage to Rock Harbor via Windigo/McCargoe Cove/Belle Isle
5/9 thru 5/23..... W & Sat 7:30 a.m.
5/25 thru 9/12..... M, W & Sat 7:30 a.m.
9/16 thru 10/14..... W 7:30 a.m.

■ Rock Harbor to Grand Portage via Daisy Farm/Chippewa Harbor/Malone Bay/Windigo
5/10 thru 5/24..... Th & Sun. 8:00 a.m. (9:00 a.m. EDT)
5/26 thru 9/13..... Tue, Th & Sun 8:00 a.m. (9:00 a.m. EDT)

9/17 thru 10/15..... Th 8:00 a.m. (9:00 a.m. EDT)

Windigo Round-Trip – Sat. & Sun. 9/19 thru 10/18
Grand Portage to Windigo.....8:00 a.m.
Windigo to Grand Portage.....1:00 p.m. (2:00 p.m. EDT)

FARES ONE-WAY

Grand Portage to Windigo.....\$61.00
Children (4 thru 11 years).....41.00
Grand Portage to McCargoe Cove/Belle Isle/Rock Harbor/Daisy Farm/Chippewa Harbor/Malone Bay.....72.00
Windigo to McCargoe Cove.....44.00
Windigo to Rock Harbor.....56.00
McCargoe Cove/Belle Isle to Rock Harbor.....44.00
Rock Harbor to Daisy Farm/Chippewa Harbor/Malone Bay or in between44.00
Rock Harbor/Daisy Farm to Windigo56.00
Chippewa Harbor/Malone Bay to Windigo.....44.00
Canoe, Kayak.....31.00
Tandem35.00
Outboard Motors (empty of fuel)27.00
Fuel Tanks for Outboard Motors (empty of fuel)6.00
Air Tanks (each)11.00
40 lbs. Gear per passenger.....FREE
Additional freight after 40 lbs.\$31.00/100 lb.

RESERVATIONS
Full payment required for confirmed reservations. Major credit cards accepted. National Park User Fee is payable at time of ticket purchase. Refund is 85% of fare, provided cancellation is received at least 3 full days (two weeks for groups of seven or more) prior to departure date.

MISCELLANEOUS
Parking fee • Hot coffee available • Freight shipments must be arranged in advance
• Fishing poles must be in protective cases
• Hard gear must be in securely closed packs.

FOR INFORMATION OR RESERVATIONS CONTACT

Grand Portage-Isle Royale Transportation Line, Inc.
P.O. Box 10529, White Bear Lake, MN 55110

Phone: (651) 653-5872 – Oct thru April
(218) 475-0024 – May thru Oct

E-mail: sivertjen@hotmail.com

Website: www.isleroyaleboats.com

FROM GRAND PORTAGE, MINNESOTA



WENONAH

3 hours one-way, concession operated, 63 ft. vessel

SCHEDULE (Central Daylight Time)

■ Grand Portage to Windigo.....departure 8:30 a.m.
6/20 thru 7/11 W, Fri, Sat
7/15 thru 8/16..... W, Th, Fri, Sat, Sun
8/19 thru 9/5..... W, Fri, Sat

■ Windigo to Grand Portage daily 2:30 p.m. (3:30 p.m. EDT)

6/20 thru 7/11 W, Fri, Sat
7/15 thru 8/16..... W, Th, Fri, Sat, Sun
8/19 thru 9/5 W, Fri, Sat

FARES ONE-WAY

Adults.....\$61.00
Children (4 thru 11 years)41.00
Canoe/Kayak31.00
Double Kayak35.00
Outboard Motor.....27.00
Air Tanks (each)10.00
40 lbs. Gear per passenger.....FREE
Additional freight after 40 lbs.\$31.00/100 lb.

SAME DAY ROUND-TRIP

Adults.....\$51.00
Children (3 thru 11 years)28.00

RESERVATIONS
Full payment required for confirmed reservations. Major credit cards accepted. National Park User Fee is payable at time of ticket purchase. Refund is 85% of fare, provided cancellation is received at least 3 full days (two weeks for groups of seven or more) prior to departure date.

MISCELLANEOUS

Parking fee • Hot coffee available • Limited snacks
• Sightseeing en route • Fishing poles must be in protective cases • Hard gear must be in securely closed packs.

FOR INFORMATION OR RESERVATIONS CONTACT

Grand Portage-Isle Royale Transportation Line, Inc.
P.O. Box 10529, White Bear Lake, MN 55110

Phone: (651) 653-5872 – Oct thru April
(218) 475-0024 – May thru Oct

E-mail: sivertjen@hotmail.com

Website: www.isleroyaleboats.com

FROM HOUGHTON, MICHIGAN



SEAPLANE

Air service to Isle Royale operates from the Houghton County Airport from mid May through mid September

The seaplane accommodates up to four persons. Baggage is limited to 50 pounds per person. The plane cannot carry stove fuel. Selected fuels are available upon arrival at the Park.

FARES

Not available at time of printing.

FOR INFORMATION OR RESERVATIONS CONTACT

Royale Air Service, Inc
P.O. Box 15184
Duluth, MN 55815

Phone: (218) 721-0405
(877) 359-4753

Fax: (218) 721-0409
(877) 359-4754

E-mail: Royaleairservice@aol.com

Website: www.royaleairservice.com

WATER TRANSPORTATION ON THE ISLAND

VOYAGEUR II

During its clockwise circumnavigation of the Island, the *Voyageur II* provides drop-off and pick-up services at several areas. Please refer to their schedule and rates.

ROCK HARBOR LODGE WATER TAXI

Provides drop-off and pick-up services between Rock Harbor and McCargoe Cove on the north shore and Rock Harbor and Malone Bay on the south shore. Available 5/22 thru 9/12. For contact information refer to page 2.

GENERAL INFORMATION

- No alcohol consumption on passenger ferries.
- Pets and wheeled devices are not allowed.
- Wheelchairs are allowed.
- Stove fuel can be carried in approved containers on ferries, but not on the seaplane.
- Lake Superior weather is cool throughout the year; for comfort bring a warm jacket.

Isle Royale's Recreation Fee Program

Fee Categories	Rate and Explanation
Daily User Fee	\$4.00 per person per day. Children 11 and under are exempt from the fee.
(Optional): Individual Season Pass	\$50.00 This pass is valid from April 16 through October 31 of the year indicated. The pass covers the User Fee for the person whose signature appears on the pass.
(Optional): Season Boat Rider Pass	\$150.00 This pass is valid from April 16 through October 31 of the year indicated. The pass covers the User Fee for all persons onboard, when affixed to the private boat. When camping, the pass is only valid for passengers included in and following the itinerary of the vessel.

Join the Isle Royale & Keweenaw Parks Association & Support Isle Royale National Park Programs

The Isle Royale & Keweenaw Parks Association, in partnership with the National Park Service, promotes the public’s understanding and appreciation of Isle Royale National Park and Keweenaw National Historical Park through education and research.

By publishing and selling products about Isle Royale National Park and Keweenaw National Historical Park, we educate people about these special places and raise funds that are re-invested in the parks to support research and interpretive programs.

Every year the Isle Royale & Keweenaw Parks Association contributes approximately \$25,000 in cash and in-kind aid to Isle Royale National Park.

YOU CAN HELP....

You can support the work of the Isle Royale & Keweenaw Parks Association and our partner parks by becoming a contributing member of our organization. Your tax-deductible contribution will help us share the stories of Isle Royale National Park and Keweenaw National Historical Park with people of all ages, around the world.

Membership levels are:

Life _____	\$1000	(Payable in 5 installments)
Patron _____	250	
Sustaining _____	100	
Supporting _____	50	
Household _____	35	
Individual _____	25	

Member benefits:

- a 10% discount on all purchases from IRKPA outlets and many other National Park Visitor Centers throughout the U.S.,
- three issues of Wolf’s Eye newsletter,
- copies of park newspapers, The Greenstone and the Keweenaw Guide,
- invitations to park programs, trips, and events,
- monthly e-mail park news updates.

Become a member today!

Call us at 800-678-6925, or join online at www.irnha.org

The Isle Royale and Keweenaw Parks Association:

Sells books and other educational products in visitor centers at Rock Harbor, Windigo and Houghton;



Windigo Visitor Center



Participates in Special Park Programs and Celebrations;

50th Anniversary of Wolf Moose Study: Pilots Don Murray and Don Glaser, Researchers Dave Mech and Rolf Peterson.

Conducts field trips and workshops.

2008 Botany workshop participants heading to Raspberry Island.



Provides funding for Research at Isle Royale.

IRKPA provides funding for the annual beaver survey

THE ISLE ROYALE & KEWEENAW PARKS ASSOCIATION PRODUCTS

BOOKS, MAPS & MORE

Your purchases help support Isle Royale National Park!

NEW!! A View from the Wolf’s Eye \$12.95
Carolyn Peterson’s memoir of her 37 summers on Isle Royale as wife of long-time wolf/moose researcher Rolf Peterson. An uplifting and inspiring chronicle of day-to-day life in a very special wilderness. 102 pages. Author: Carolyn Peterson

Island Life: An Isle Royale Nature Guide \$19.95
A complete guide to the common flora and fauna of Isle Royale in one easy-to-use and easy-to-carry volume. Over 350 species of mammals, birds, fish, reptiles, trees, and flowers, each illustrated with a color photograph or drawing. 168 pages. Authors: Ted Gostomski & Janet Marr

Isle Royale National Park: Foot Trails and Water Routes \$15.95
The park’s authoritative illustrated guidebook. All the information you need to plan everything from a series of day hikes to a two-week trek that circles the park. A must for planning your backpacking or canoeing trip to Isle Royale. 136 pages. Third edition. Author: Jim DuFresne

The Wolves of Isle Royale: A Broken Balance \$29.95
This classic firsthand account of the Isle Royale predator/prey study is back in print in a new paperback edition. Illustrated with over 100 photographs, this book reveals the true nature of the little-understood wolf and some of the secrets of this one-of-a-kind 50-year study. 192 pages. Author: Rolf Peterson

NEW!! Ecological Study of Wolves on Isle Royale 2008-2009 \$4.95
This year’s report from the winter study on Isle Royale. Includes latest information on the island’s wolf and moose populations. Annual Reports from 1989-2007 also available. Author: Rolf Peterson & John Vucetich

Superior Wilderness: Isle Royale National Park \$16.95
A natural history of Isle Royale for the layperson, emphasizing the ecology of the island, the relationship between its plants, animals and physical environment. Color photographs and an extremely readable text. Maps, photos, charts, illustrations. 171 pages. Author: Napier Shelton

Fishes of Isle Royale \$5.95
This complete fishing guide includes information on the five fish habitats on Isle Royale, a full description of all major species with illustrations, keys to fish identification, and an annotated list of fishes. Charts, maps. 58 pages. Authors: K.F. Lagler & C.R. Goldman

Isle Royale: A Photographic History \$29.95
The history of Isle Royale from early exploration in the 1600s to the birth of the national park as told through historical photos and maps. Chapters: Exploration, Copper Mining, Navigation, Commercial Fishing, Recreation, and Creating a National Park. 160 pages. Authors: Tom & Kendra Gale

The Geologic Story of Isle Royale National Park \$10.95
Classic study of Isle Royale’s geologic history and landscape, the shifting of rocks and specific minerals which produced one of the most beautiful islands in North America. Maps, photos, and illustrations. 66 pages. Author: N. King Huber

Diaries of an Isle Royale Fisherman \$12.95
Reproductions of the journals and correspondence of Elling Seglem who fished from Isle Royale’s Fisherman’s Home between 1920 and 1932. These newspaper-format letters were sent home to his family in Chicago. Historic photos and cartoons. 185 pages. Editors: Jill Burkland & Robert Root

Trails Illustrated Map \$11.95
Topographic map includes valuable wilderness tips and Leave No Trace guidelines, along with updated trails, trailheads, points of interest, campgrounds, and much more. Printed on waterproof, tear-resistant material with a plastic coating with one half of the island on each side. Measures 4” x 9” folded and 38” x 25” fully opened. Scale = 1:50,000. Updated 2006.

NOAA Lake Charts \$20.75
Official navigation charts for Isle Royale, Lake Superior, Grand Portage, the Great Lakes, Keweenaw Peninsula, and Portage Canal. Soundings in feet. Folded or rolled. Add \$3.00 for mailing tube if rolled.

Exploring Isle Royale DVD \$21.95
This orientation video produced by the National Park Service shows how to best enjoy the island’s many attributes, including its trails, lakes, and campsites. Winner of the 1995 Michigan Outdoor Writers Association Best Outdoor Travel Program. 28 minutes.

Isle Royale Wolf T- Shirt \$16.95
Heather gray heavy cotton short-sleeve T-shirt with new wolf design in tones of black, gray and brown. Adult sizes M to XXL.

Special Value Packages

NEW!! Wolf Study Package \$38.00
Includes copies of the new edition of The Wolves of Isle Royale: A Broken Balance, Ecological Study of Wolves on Isle Royale 2008-2009, and Winter Study 2009: Notes from the Field.

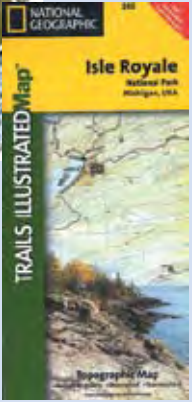
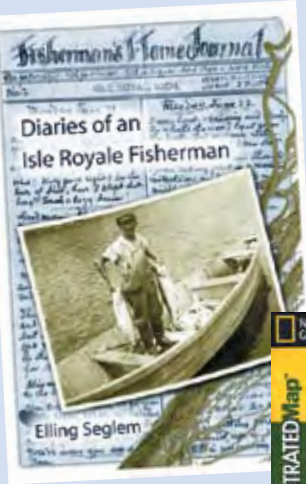
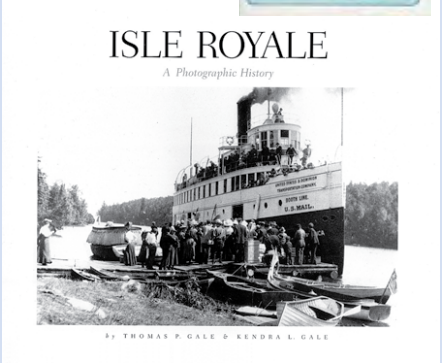
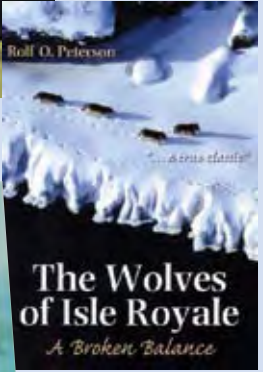
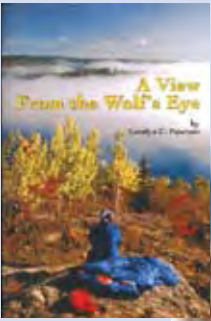
Hiking & Canoeing Package \$28.00
Includes the Trails Illustrated map, the book Isle Royale National Park: Foot Trails and Water Routes, and the park checklists of birds, mammals, and rocks.

Fishing Package \$25.50
Includes the Isle Royale Navigational Chart, the book The Fishes of Isle Royale, and copies of Isle Royale fishing regulations and Aquatic Invasive Species brochure.

www.irnha.org
800-678-6925

IRKPA members receive a 10% Discount on all purchases!

Visit our sales outlets at Isle Royale National Park Visitor Centers, on the waterfront in Houghton, Michigan, and on the island at Rock Harbor and Windigo.



Shipping Charges/US Mail:	
Up to \$5.00	\$3.00
\$5.01 – \$10.00	\$4.00
\$10.01 – \$20.00	\$5.00
\$20.01 – \$30.00	\$7.00
\$30.01 – \$50.00	\$8.00
\$50.01 – \$75.00	\$9.00
Over \$75.00	free
Priority Mail: Add \$4.00	
Additional Charges outside U.S.	